CALIFORNIA PHENOLOGY TCN – QUARTERLY REPORT – AUGUST 2019

Assembled by Katie Pearson and Jenn Yost, August 1, 2019

Progress in Digitization Efforts:

All institutions are continuing to image specimens or have achieved their imaging goals and have moved on to image processing. Figure 1 shows the distribution of unprocessed, barcoded/processed, and imaged target specimens per institution as of July 2019.

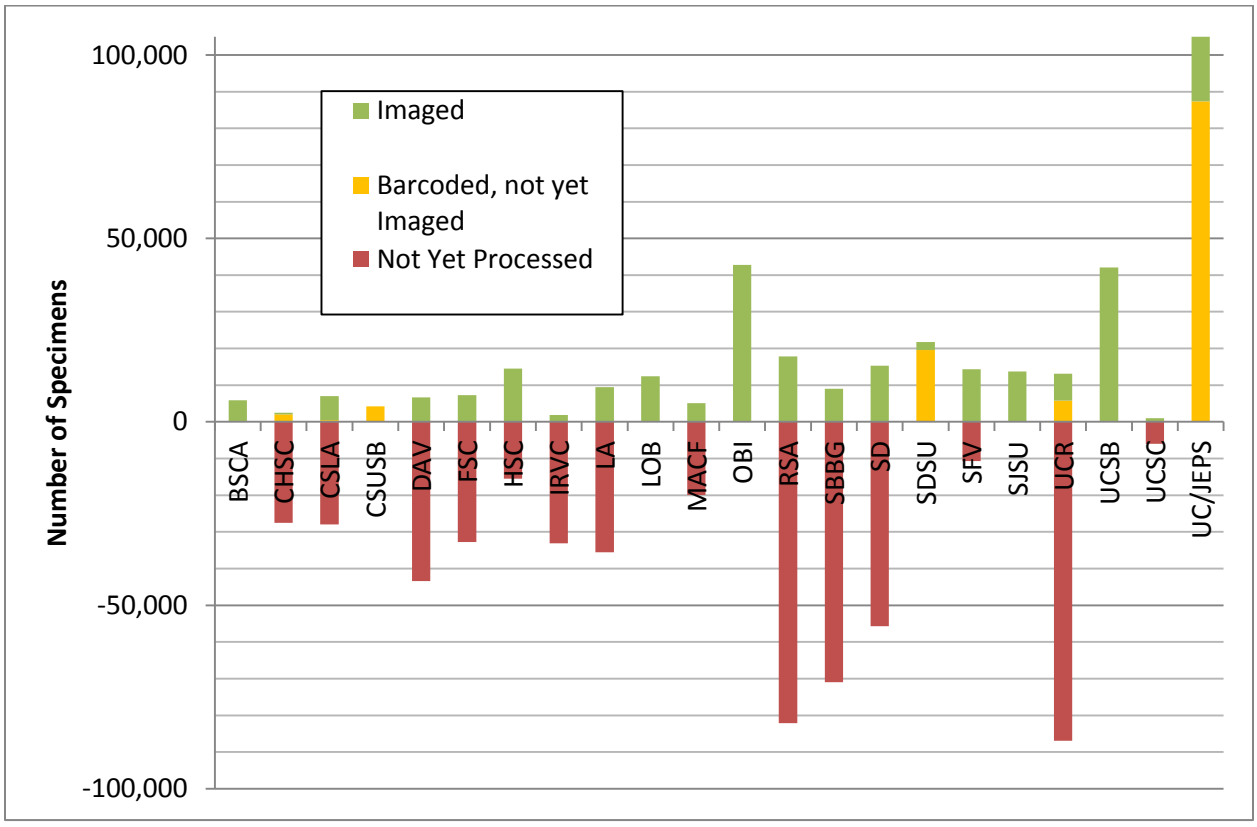

Figure 1. Digitization progress, in terms of number of specimens imaged or barcoded, not yet imaged. Bars above the zero line indicate specimens that have been processed in preparation for imaging or have been imaged. The green portions of these bars represent the number of specimens that have been imaged. Red bars below the zero line indicate the number of target specimens (i.e., specimens to be imaged as part of the CAP TCN) that have not yet been pre-processed or imaged. These numbers do not indicate transcription, georeferencing, or phenological scoring progress, which will begin in future years. The proportions of imaged specimens that have been fully processed (converted into JPEG and DNG format, uploaded to server, made available online, linked to existing records, and archived) are not represented in this figure.

Share and Identify Best Practices and Standards (including Lessons Learned):

On July 28th, the lead PI (Jenn Yost), PM (Katie Pearson), portal developer (Ed Gilbert), NEVP representative (Patrick Sweeney), and iDigBio director (Gil Nelson) met with 14 in-person and remote participants to discuss phenology data standards. As a result, we have a way forward to store and share phenology data coded from herbarium specimen images using the new Symbiota scoring tools.

Identify Gaps in Digitization Areas and Technology:

Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts:

The project website, particularly the workflows and protocols page (https://www.capturingcaliforniasflowers.org/workflow--protocols.html) was restructured to enhance clarity and resource accessibility.

New protocols were developed in preparation for the switch to CyVerse image hosting (see next section). A network-wide virtual meeting is scheduled for late August 2019 to discuss this and other developments for the CAP TCN, as well as strategize for Year 2.

A webinar introducing GBIF and its data policies will be held in September or October 2019 in association with GBIF personnel.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

We are collaborating with CyVerse to web-host our images using a community data folder and their discovery environment. This process will replace the current workflow of web-hosting images via iDigBio servers. Network-wide adoption of this new workflow is expected to commence in late Fall 2019.

On July 28th of the Botany 2019 conference in Tucson, AZ, the lead PI (Jenn Yost), PM (Katie Pearson), portal developer (Ed Gilbert), NEVP representative (Patrick Sweeney), and iDigBio director (Gil Nelson) co-coordinated a workshop to demonstrate the new Symbiota tools developed to score phenology of herbarium specimens and to discuss data standards that will be used to store and share these data. Excluding the five organizers, the tool demonstration part of the workshop had 15 attendees, 5 of whom also participated in the data standards conference call. An additional 9 members of the broader community, including representatives of the Plant Phenology Ontology (Rob Guralnick) and the National Phenology Network (Kathy Gerst), participated in the data standards conference call remotely.

The PM and portal developer have finalized a protocol to enable collections to share their data automatically from the portal to GBIF. Data sharing of all collaborating institutions with GBIF will commence in late Fall 2019.

The Botany 2019 meeting also leant the opportunity for the lead PI and PM to meet with personnel from other TCNs (e.g., Patrick Sweeney, NEVP; Michael Denslow, SERNEC) and attend talks to learn best practices, workflows, and lessons learned.

The first Notes from Nature citizen science expedition was completed in July 2019, and a new expedition was launched shortly thereafter.

Two additional collections have been added to the CCH2 portal: the CSU Stanislaus Herbarium and the Mendocino College Coast Center Herbarium. Both collections now manage their records live in the portal.

Share and Identify Opportunities and Strategies for Sustainability:

As previously described, we are collaborating with CyVerse to web-host our images on their servers rather than iDigBio servers.

Share and Identify Education and Outreach (E&O) Activities:

The PM shares updates on the project and phenology-related news via the network Twitter account (@CalPhenologyTCN).

The first Notes from Nature (NfN) expedition, which engages citizen scientists and other volunteers to transcribe specimen data from images of specimens, was completed in July 2019. A new expedition featuring specimen images from CSU Fresno was launched shortly thereafter and is currently 2% complete. A Zooniverse blog post was published to introduce this expedition: https://blog.notesfromnature.org/2019/07/18/capturing-californias-flowers/. The curator of the CSU Fresno Herbarium plans to engage undergraduates in data transcription, including participating in the WeDigBio event in October.

The PM presented a poster about the CAP TCN at the Botany 2019 meeting on July 29, 2019 and briefly introduced the project during an oral presentation. The following poster presentations were given at Botany 2019 by undergraduates associated with the project at CSU Long Beach:

Olmeda BL [undergraduate], Cuadra S [undergraduate], Barnett A [undergraduate], Rice M [undergraduate], Fisher AE [PI]. Capturing California's Flowers at the Beach: Herbarium Specimen Imaging at Long Beach State (LOB). Poster to be presented at Botany, July 2019, Tucson, Arizona.

McGowan H [undergraduate], Fisher AE [PI]. A Flora of the Chiquito Basin, Santa Ana Mountains, Peninsular Ranges of Southern California. Poster to be presented at Botany, July 2019, Tucson, Arizona.

Tang K [undergraduate], Fisher AE [PI]. A Visual Guide and Morphometric Analysis of Leaf Shapes of Common Shrubs of the Santa Ana Mountains of Southern California. Poster to be presented at Botany, July 2019, Tucson, Arizona.